

Appl. No. 09/692,709  
Amdt. Dated July 14, 2004  
Reply to Office action of April 15, 2004  
Attorney Docket No. P12266/45687-00036  
EUS/J/P/04-6160

### Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (Currently Amended) A method for establishing security in an ad hoc communication network, the ad hoc communication network comprising a set of communication nodes, at least two nodes of the set of communication nodes having a mutual trust relation and comprising a trust group, the trust relations being created with public keys, and at least one additional ~~node~~ node, the at least one additional node being a candidate node for joining the trust group within the ad hoc communication network, the nodes having authority to delegate trust to nodes of the set of communication nodes within the trust group they trust, the method comprising the steps of:  
  
receiving a request from the candidate node to join the trust group within said ad hoc communication network wherein said ad hoc communication network does not include a separate certificate authority;  
  
identifying a node of the set of communication nodes within the trust group having a trust relation with the candidate node, the node having the trust relation with the candidate node being an X-node; and  
  
distributing trust relations between all members in the trust group and the candidate node by means of the X-node distributing the public key associated with said candidate node to said all members of the trust group.
2. (Cancelled)
3. (Previously Presented) The method of claim 1, wherein the ad hoc communication network comprises a single trust group and a single candidate node, and wherein the distributing step comprises the X-node sending a signed message

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comprising a list of nodes that the X-node trusts within the ad hoc communication network and all corresponding public keys to the candidate node.

4. (Previously Presented) The method according to claim 1, wherein the distributing step comprises the X-node signing the candidate node's public key.
5. (Previously Presented) The method according to claim 4, wherein the distributing step comprises the X-node sending a message comprising the candidate node's signed public key to the nodes within the trust group.
6. (Currently Amended) The method according to claim 1 ~~claim 2~~, wherein the ad hoc communication network comprises a set of nodes comprising several trust groups, each of the set of nodes being candidates for joining all trust groups within the ad hoc communication network that the set of nodes are not already a member of, the method comprising, after receiving the messages, each node of the set of nodes creating a list of candidate nodes that a given node of the set of nodes trusts and corresponding public keys.
7. (Previously Presented) The method according to claim 6, further comprising deciding one node within the ad hoc communication network to act as a server node.
8. (Previously Presented) The method according to claim 7, further comprising the server node receiving, from each other node within the ad hoc communication network, a message comprising a respective public key, a respective list of candidate nodes that the respective node trusts, and corresponding public keys.
9. (Previously Presented) The method according to claim 8, further comprising the server node classifying the at least one candidate node as being a server-trusted node or as being a server-un-trusted node, depending on whether the server node trusts the at least one candidate node or not.

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10. (Previously Presented) The method according to claim 9, wherein the identifying step further comprises the server node identifying at least one Y-node required for distributing trust relations between the server node and at least one server untrusted node.
11. (Previously Presented) The method according to claim 10, wherein said distributing step further comprises sending, by the server node, of a request to the identified at least one Y-node to distribute said trust relations between the server node and the server-untrusted nodes.
12. (Previously Presented) The method according to claim 11, wherein said distributing step further comprises obtaining, by the server node, of said requested trust relations.
13. (Previously Presented) The method according to claim 12, wherein the step of obtaining the trust relations further comprises:  
signing, by the Y-node, of the public key of the server node for each server-untrusted node that the Y-node has a trust relation with; and  
forwarding, by the Y-node, of said signed public key to the server-untrusted node.
14. (Previously Presented) The method according to claim 12, wherein the step of obtaining the trust relations comprises:  
signing, by the Y-node, of the public key of the server-untrusted node for each server-untrusted node that the Y-node has a trust relation with; and  
forwarding, by the Y-node, of said signed public key to the server node.

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15. (Previously Presented) The method according to claim 12, comprising the further step of, after obtaining said trust relation, reclassifying, by the server node, the server-untrusted node with the obtained trust relation as being a server-trusted node.

16. (Previously Presented) The method according to claim 12, comprising the further step of sending, by the server node, of a signed message comprising the server node's trusted public keys belonging to trusted candidate nodes within the ad hoc communication network.

17. (Currently Amended) An ad hoc communication network comprising:  
a set of communication nodes within said ad hoc communication network wherein said communication network does not have a separate certification authority.

each node of said set of communication nodes comprising a receiver and a computer, the computer comprising a processor and a memory, each node being interconnected with communication links, at least two of the nodes having a mutual trust relation and comprising a trust group, the trust relations being created with public keys,

at least one additional node of the set of communication nodes being a candidate node for joining at least one trust group within the ad hoc network,

the at least one candidate node having means for requesting if any of the nodes within the trust group have a trust relation with the candidate node, and

each node being authorised to and having means for distributing trust relations between the trust group and the candidate node that the node trusts by distributing the public key associated with said candidate node to said nodes of the trust group.

18. (Previously Presented) The ad hoc communication network according to claim 17, wherein said each node comprises means for creating a list of candidate nodes that each node trusts and corresponding public keys of each node to be stored in the memory.

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19. (Previously Presented) The ad hoc communication network according to claim 17, wherein one node of the set of communication nodes within the ad hoc network is operable as a server node capable of administrate distribution of trust relations.
20. (Previously Presented) The ad hoc communication network according to claim 19, wherein the server node is operable to classify the at least one candidate node as being a server-trusted node or as being a server-untrusted node, depending on whether the server node trusts the at least one candidate node or not.
21. (Previously Presented) The ad hoc communication network according to claim 20, wherein the server node comprises means for identifying at least one Y-node required for distributing trust relations between the server node and server-untrusted nodes.
22. (Previously Presented) The ad hoc communication network according to claim 21, wherein the server node comprises means for sending to each of said at least one Y-node:
- a request as to which of the server-untrusted nodes the Y-node has a trust relation with; and
  - a request for distributing trust relations between the server node and the requested server-untrusted nodes.
23. (Previously Presented) The ad hoc communication network according to claim 20, wherein the server node comprises means for distributing obtained trust relations to the nodes within the ad hoc communication network.